



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,175	10/14/2003	Adam C. Bennett	GP-304210	3797
7590	01/10/2006		EXAMINER	
Leslie Hodges General Motors Corporation Legal Staff, Mail Code: 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000			TRAN, DALENA	
			ART UNIT	PAPER NUMBER
			3661	
DATE MAILED: 01/10/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/686,175	BENNETT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dalena Tran	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 October 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 2-13 and 23-27 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 23-27 is/are allowed.  
 6) Claim(s) 2-8 is/are rejected.  
 7) Claim(s) 9-13 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

**DETAILED ACTION**

**Notice to Applicant(s)**

1. This office action is responsive to the amendment filed on 10/24/05. As per request, claims 1, and 14-22 have been cancelled. Thus, claims 2-13, and 23-27 are pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-8, are rejected under 35 U.S.C.103(a) as being unpatentable over Abe et al. (6,721,637) in view of Urban et al. (5,704,440), and Frank (5,842,534).

As per claim 7, Abe et al. disclose a method of providing a silent mode of operation for a hybrid electric vehicle having a rechargeable energy storage system (ESS), comprising steps: transmitting a silent mode initiation request to a silent mode controller (see at least columns 6-7, lines 52-3), comparing an actual value of at least one state parameter of the ESS that is indicate of the availability of the ESS for implementing the silent mode to at least one silent mode initiation limit value associated with the actual value, wherein if the actual value of the at least one state parameter compared to the associated at least one mode initiation limit value indicates that the silent mode is allowed, the method proceeds to step (3), and wherein if the actual value of the at least one state parameter indicates that the silent mode is not allowed, step (2) is repeated so long as the silent mode initiation request is being transmitted, and transmitting a silent mode activating request to the silent mode controller (see at least column 7, lines 4-38),

operating the vehicle in the silent mode using the silent mode controller, comprising designating an electric drive motor as a primary source of propulsion energy for the vehicle and designating an engine as a secondary source of the propulsion energy for the vehicle (see at least column 1, lines 21-54; and column 3, lines 41-59), terminating the silent mode in response to the occurrence of a mode termination event (see at least column 7, lines 39-52), and limiting an output power of the engine while the vehicle is in the silent mode to a silent mode output power limit that is less than a maximum output power of the engine (see at least column 1, lines 30-46; column 8, lines 5-52; and column 16, lines 8-25). In addition, Urban et al. also disclose limiting an output power of the engine while the vehicle is in the silent mode to a silent mode output power limit that is less than a maximum output power of the engine (see at least columns 6-7, lines 50-67).

Abe et al. do not disclose modal quantity of energy is used to make up the difference between the modal quantity of energy and a total vehicle propulsion energy. However, Frank discloses a modal quantity of energy in the ESS is allocated for use by the electric drive motor during the silent mode and the engine is used to make up the difference between the modal quantity of energy and a total vehicle propulsion energy requirement during the silent mode (see at least the abstract; column 3, lines 35-60; columns 5-6, lines 54-10; and columns 6-8, lines 59-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Abe et al. by combining manual transmitting of the silent mode initiation request by a vehicle operator, and modal quantity of energy is used to make up the difference between the modal quantity of energy and a total vehicle propulsion energy to provide appropriate energy power for the vehicle to provide maximizing efficiency and minimizing

harmful pollutants depending upon the driving conditions encountered by the driver and any time the driver desired.

As per claim 2, Urban et al. disclose wherein the step of transmitting a silent mode initiation request is selected from the group consisting of: (a) manual transmitting of the silent mode initiation request by a vehicle operator, (b) automatic transmitting of the silent mode initiation request as a function of an absolute position of the vehicle, and (c) automatic transmitting of the silent mode initiation request as a function of a relative position of the vehicle to a region in which silent mode operation of the vehicle is desired (see at least columns 6-7, lines 50-12).

As per claim 3, Abe et al. disclose (2A) precharging the ESS prior to initiation of a silent mode (see at least columns 3-4, lines 60-16).

As per claims 4-6, Abe et al. disclose wherein the step of precharging the ESS comprises precharging the ESS to a state of charge (SOC) value that is less than or equal to a target precharge SOC limit, the target precharge SOC limit value is in the range of about 60-75 percent, and charging the ESS at a maximum charging power of the vehicle (see at least columns 2-3, lines 58-2; columns 3-4, lines 60-34; column 5, lines 58-67; column 7, lines 39-52; columns 9-10, lines 39-46; and column 15, lines 43-57).

As per claim 8, Abe et al. disclose the silent mode output power limit of the engine is automatically controlled as a function of a vehicle speed (see at least column 3, lines 10-40; and column 8, lines 16-28).

4. Claims 9-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 23-27, are allowable.

#### **Remarks**

5. Applicant's argument filed on 10/24/05 has been fully considered. Upon updated search, the new ground of rejection has been set forth as above.

The allowance of claims 2-8 in the last office action is now withdrawn.

No new references in this rejection.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner  
Dalena Tran

January 5, 2006

